

ABSTRACT

A method for calculating the capacitance of a transducer (C_0) without knowing the exact resonance frequency of a transducer/blade combination is achieved by sweeping across a broad frequency range which contains resonant and non-resonant frequencies where C_0 can be measured. A pre-defined frequency range is set independently of the resonance frequency of a specific transducer/blade combination. C_0 of the transducer/blade is measured at several different frequencies within the pre-defined frequency range to ensure that invalid C_0 measurements are disregarded, and the temperature of the transducer is calculated based on valid C_0 measurements. The determined transducer temperature, based on C_0 measurements, can be used to optimize performance and/or provide a safety shutdown mechanism for the generator.